

WHAT IS CLAIMED IS:

1. A semi-transmission type liquid crystal display device comprising:

5 a lower substrate having a reflection electrode and a lower orientation film;

an upper substrate having a color filter and an upper orientation film;

10 a liquid crystal layer interposed between the upper and lower substrates;

upper and lower phase films positioned on the outer surfaces of the upper and lower substrates, respectively, for transforming linearly polarized light into circularly polarized light;

15 upper and lower polarization plates provided on the upper and lower phase films, respectively, for transforming natural light from outside into linearly polarized light;

a reflection-type liquid crystal display area; and

20 a transmission-type liquid crystal display area located between the upper and lower substrates having no reflection electrode, wherein,

in the reflection-type liquid crystal display area:

the liquid crystal layer has a phase delay value ($d\Delta n$) of 0.24-0.27 μm ;

the upper phase film has a function of $\lambda/4$ phase compensation and an optical axis of 140° to 146° ;

the upper orientation film has an orientation angle of 40° to 50° relative to a horizontal line;

5 the lower orientation film has an orientation angle of -10° to -20° relative to a horizontal line; and

the upper polarization plate has a transmission axis angle of 104° to 122.5° , and,

in the transmission-type liquid crystal display area:

10 the liquid crystal layer has a phase delay value ($d\Delta n$) of $0.24-0.40 \mu m$;

the lower phase film has a function of $\lambda/4$ phase compensation and an optical axis of 50° to 64° ; and

the lower polarization plate has a transmission axis
15 angle of 100° to 110° .

2. The semi-transmission type liquid crystal display device according to claim 1, wherein a ratio between the reflection-type liquid crystal display area and the
20 transmission-type liquid crystal display area is 5:5.

3. The semi-transmission type liquid crystal display device according to claim 1, wherein the upper phase film has

a phase value 5 nm larger than that of the lower phase film.

4. The semi-transmission type liquid crystal display device according to claim 1, wherein the upper and lower
5 polarization plates are subject to a half-reflection processing.

5. The semi-transmission type liquid crystal display device according to claim 1, wherein the upper and lower
10 polarization plates are subject to a half-reflection processing and an anti-glare processing.

6. The semi-transmission type liquid crystal display device according to claim 1, wherein the liquid crystal layer
15 is composed of twisted nematic liquid crystals having a twist angle of 60°.

7. A semi-transmission type liquid crystal display device comprising:

20 a lower substrate having a reflection electrode and a lower orientation film;

an upper substrate having a color filter and an upper orientation film;

a liquid crystal layer interposed between the upper and

lower substrates;

a lower phase film positioned on the outer surface of the lower substrate for transforming linearly polarized light into circularly polarized light;

5 upper and lower polarization plates provided on the upper and lower phase films, respectively, for transforming natural light from outside into linearly polarized light;

a reflection-type liquid crystal display area; and

a transmission-type liquid crystal display area,
10 positioned between the upper and lower substrates having no reflection electrode, wherein,

in the reflection-type liquid crystal display area:

the liquid crystal layer has a phase delay value ($d\Delta n$)
of 0.24-0.27 μm ;

15 the upper orientation film has an orientation angle of 40° to 50° relative to a horizontal line;

the lower orientation film has an orientation angle of -10° to -20° relative to a horizontal line; and

the upper polarization plate has a transmission axis
20 angle of 104° to 122.5° and

in the transmission-type liquid crystal display area:

the liquid crystal layer has a phase delay value ($d\Delta n$)
of 0.24-0.40 μm ;

the lower phase film has a function of $\lambda/4$ phase compensation and an optical axis of 50° to 64° ; and

the lower polarization plate has a transmission axis angle of 100° to 110° and

5 the upper substrate is a glass substrate having a function of $\lambda/4$ phase compensation and exhibiting circularly polarized light at 550 nm.

8. The semi-transmission type liquid crystal display
10 device according to claim 7, wherein a ratio between the reflection-type liquid crystal display area and the transmission-type liquid crystal display area is 5:5.

9. The semi-transmission type liquid crystal display
15 device according to claim 7, wherein the lower phase film has a phase value by which $\lambda/4$ phase and $\lambda/2$ phase films are arranged with an angle.

10. The semi-transmission type liquid crystal display
20 device according to claim 9, wherein the $\lambda/4$ phase and $\lambda/2$ phase films are arranged with an optical axis of 85° to 100° and 5° to 20° , respectively.

11. The semi-transmission type liquid crystal display device according to claim 7, wherein the liquid crystal layer is composed of twisted nematic liquid crystals having a twist angle of 60° .